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FINANCIAL GUIDELINES FOR INVESTING IN MOTION PICTURE LIMITED PARTNERSHIPS

L.M. Farrell †

I. INTRODUCTION: A BRIEF RECENT HISTORY OF MOTION PICTURE LIMITED PARTNERSHIP SYNDICATIONS

In the early 1980's, motion picture syndicators, in association with major Wall Street brokerage firms, aggressively promoted the sale of shares or units in Motion Picture Limited Partnership Syndications (MPLPS's) to small investors. Priced between \$1,000 and \$15,000 a share, MPLPS units were often purchased on the basis of tax shelter benefits or glamour with little consideration of the economic viability of the underlying film project. In apparent disregard of much of traditional investment analysis criteria, the sale of MPLPS's was well received by the market. Between 1982 and 1985, more than \$750,000,000 in investor equity was raised through MPLPS unit offerings.¹

The original Silver Screen Partnership (Silver Screen I), marketed by E.F. Hutton and Dean Witter, was capitalized at \$75,000,000. However, it was so well received by the market that it was over-subscribed by \$8,000,000 and raised \$83,000,000 between May and July of 1983.² Initial cash disbursements to the limited partners began quickly. Investors who invested \$10,000 in the offering had received \$1,200 in cash as of May 1985, and home video and foreign sales were expected to produce \$4,800 by the second quarter of 1986.³

The first Delphi Partnership (Delphi I), brought to market by Merrill Lynch, Dean Witter and Blyth Eastman Paine Webber, raised \$60,000,000 in units of \$5,000 for the production of sixteen films in a

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1. Martin A. Grove, *Is Hollywood a Good Investment?*, HOLLYWOOD REP., Aug. 13, 1985, at F-4.

2. *Id.*

3. Laura Landro, *Movie Partnerships Offer a Little Glitz*, WALL ST. J., May 20, 1985, at 15.

joint venture with Columbia Pictures and Tri-Star Pictures.⁴ Initial titles included *Annie*, *Blue Thunder*, *The Toy* (with Richard Pryor), and the mega-hits *Tootsie* (starring Dustin Hoffman) and *Ghostbusters*. Participants who invested \$10,000 in Delphi I in 1982 began receiving cash payments thirteen months later. In addition to a \$7,000 tax deduction in 1982-1983 and a \$700 investment tax credit, \$4,000 in cash had been returned as of May 1985.⁵

The Tax Reform Act of 1986⁶ removed much of the tax shelter previously enjoyed by Motion Picture Limited Partnerships (MPLP's) such as Silver Screen I and Delphi I. The future marketability of motion picture investment projects depends on how well Wall Street and the syndication industry can develop motion picture investment packages at sufficiently low costs to make them attractive to investors. In the absence of significant tax shelter advantages, film projects must be evaluated in terms of their economic viability.

The purpose of this article is to provide a set of practical guidelines which can be used by individual investors to analyze the financial feasibility of MPLP's. Simple capital budgeting techniques, which can also be used to analyze limited partnership syndications in areas such as real estate, gas and oil, are applied to determine the probability that the investment will realize a positive net present value, and to project possible internal rates of return, before and after tax.⁷ This article discusses the financing and/or participation relationship between the general partner and the limited partner.

II. OVERVIEW OF THE LIMITED PARTNERSHIP INVESTMENT VEHICLE

MPLPS offerings can be valued by applying the capital budgeting techniques used to analyze the limited partnership syndications of other types of assets such as real estate, oil and gas exploration, scientific research projects, and livestock.⁸

Generally, syndication may be considered a generic term applied to any form of organization or relationship which allows two or more investors to participate in the ownership of a single asset. Syndication is not a

4. David Weber, *You Ought to Be in Movies or Should You?*, CAL. LAW., Apr. 1983, at 48.

5. Landro, *supra* note 3.

6. 26 U.S.C. § 101 *et seq.*

7. PETER LUSZTIG ET AL., *GESTION FINANCIÈRE* 180 (1983).

8. J. FRED WESTON & THOMAS F. COPELAND, *MANAGERIAL FINANCE* 99 (8th ed. 1986).

legal form of entity, but is commonly classified as a form of ownership as well as a method of financing and marketing investments. Any real estate project organized under a multi-person form of ownership can be considered a syndication. Commentators treat real estate syndication as simply one form of equity financing, noting that capital budgeting techniques can be used to analyze syndications as well as individual and institutional investment decisions.⁹

The term syndication implies the fractionalization of the interest in the underlying asset.¹⁰ The relationship which exists among the individual investors and between the investors and the interest in the underlying asset is defined in the syndication contract. In the simple syndicate structure (Diagram 1), there are two assets: the underlying asset owned by the syndicate and the investment units owned by the investors. Investment units represent a fractionalized ownership in the underlying asset, rather than direct ownership of the asset itself.

DIAGRAM 1: A SIMPLE SYNDICATE



The exact characteristics of the investment units are determined by the form or organizational structure of the syndicate. In the case of real estate syndications, this structure is based on six types of legal relationships: co-ownership, divided ownership, corporation, trust, general partnership and limited partnership. Only the corporation is treated as a separate legal entity; the remaining five options constitute legal relationships which exist among investors as specified in agreements or as established in governing statutes.

The limited partnership syndicate is a popular form of ownership because it offers the investor the limited legal liability similar to a corporation, as well as the tax benefits of a partnership, such as pass-through of tax losses and capital gains.¹¹ The unlimited liability for debts and obligations is assumed by the general partner. However, to retain the limited liability status, limited partners cannot take an active role in the management of the investment project. Another disadvantage is that the

9. STEPHEN A. PYHRR & JAMES R. COOPER, *REAL ESTATE INVESTMENT* 213, 410 (1982).

10. Stanley Hamilton, *Real Estate Syndications*, *REAL ESTATE ANALYSIS AND APPRAISAL* XII.1, XII.2 (Dominique Achour ed., 1987).

11. PYHRR & COOPER, *supra* note 9, at 213.

partnership, and not the individual partners, decide the amount of depreciation taken in a given year. This may not be in the best interest of a particular investor.

A. *Basic Components of a Syndicate*

There are three types of participants in a syndication. The syndicator or promotor initiates the project, creates the syndicate, purchases and develops the initial underlying asset, and markets the syndicate investment units to investors. The syndicate manager, often the syndicator, manages the ongoing syndicate project, including the reporting and accounting functions. The investor provides equity capital and bears some of the investment risk of the syndicate. In exchange, the investor expects a return on capital, as well as the return of his or her investment.¹²

In the entertainment sector, the syndicator and the syndicate manager are often the same. As a result, a number of limited partners complain about the timeliness and quality of reported information from the syndicate manager. A recent example of problems with reporting is the lawsuit involving Paramount Pictures. Columnist Art Buchwald sued the studio over property rights to the film *Coming to America*, starring Eddie Murphy.¹³ One of the key issues was whether the film had earned a profit. Paramount argued that despite more than \$250,000,000 in worldwide box office receipts, the film lost money. Attorneys for Buchwald objected to the inclusion of studio overhead and other expenses which reduced net income to zero.¹⁴ Prospective MPLP investors should be wary of syndications which base participation payouts on net, rather than gross, revenues.

B. *Syndication Value*

Syndications are formed for a variety of reasons. One popular view is that the process of syndication can add value to the underlying asset, so that the value of the sum of all investment units is greater than the value of the underlying asset.¹⁵ To the extent that the market for investment units is inefficient, this may be correct and raises an interesting question for future research.

Little is known regarding the profitability of many film-related lim-

12. Hamilton, *supra* note 10, at XII.4.

13. Buchwald v. Paramount Pictures Corp., No. C 706 083, 1990 Cal. App. Lexis 634 (Cal. App. Dept. Super. Ct., Los Angeles, Jan. 31, 1990).

14. *Judge Warns He Might Force Paramount to Open Its Books*, L.A. DAILY NEWS, reprinted in MONTREAL GAZETTE, Aug. 7, 1990, at 48.

15. Hamilton, *supra* note 10, at XII.2.

ited partnerships. By comparison, operating data on a typical JMB Properties Ltd. partnership involving real estate, sold by Merrill Lynch in the mid-1970's, shows that each \$1,000 investment provided ordinary deductions of \$2,770, capital gains of \$361, and return of capital of \$765.¹⁶ Real estate limited partnerships sold publicly through major brokerage houses were originally intended for a predominantly tax shelter-oriented market and promised large write-offs for high tax bracket investors.¹⁷ Recently, however, many limited partnerships were offered to investors seeking income and appreciation, as well as tax shelter benefits.¹⁸

A major advantage of limited partnerships is the ability to use leverage and tax benefits to maximize return through the purchase of a small interest in large diversified portfolios.¹⁹ In the United States, the tax advantages have been reduced as a result of the Tax Reform Act of 1986.²⁰ In other countries, such as Canada, significant tax advantages, including tax credits which exceed the unit nominal value, still exist.²¹

III. MOTION PICTURE PRODUCTION AND DEVELOPMENT INVESTMENT PROJECTS

Motion Picture Production and Development (MPPD) investment projects are traditionally divided into two basic categories, that of small and large investors, depending on the amount of investment, the level of investor sophistication, and the investment return criteria.

A. *Investor Sophistication*

Small investors usually invest from \$1,000 to \$15,000.²² Major Wall Street brokerage firms, such as Merrill Lynch and Dean Witter, who are registered with the Securities and Exchange Commission (SEC) and market nationally, offer that type of MPLP units to the public. The general partner here is the syndicator who is responsible for management decisions and is liable for obligations incurred by the partnership. The limited partners have no immediate control over the films selected for financing, the deals cut, fees, costs, or remuneration to the main talent. The liability of each limited partner is limited to the amount of the initial investment.

16. PYHRR & COOPER, *supra* note 9, at 694.

17. *Id.*

18. *Id.*

19. *Id.* at 694-695.

20. 26 U.S.C. § 101 *et seq.*

21. Prospectus, Syndicate de Film XIV, Société en Commandite, Nov. 12, 1990.

22. Grove, *supra* note 1; see also *supra* notes 7, 10.

In the past, the limited partnership was structured as a tax-sheltering report rather than a tax-paying entity. A major attraction to many investors was the flow-through to the individual partners of the tax consequences of fast non-cash expensing and crediting. With the removal of the tax benefits, the breadth and reliability of revenue forecasts became more important in assessing the economic feasibility of proposed projects.

Large investors, less interested in glamour than profit, invest in film projects up to \$500,000 per unit, usually through private placement.²³ They want the best return on invested capital. Every investor, large or small, is looking for another *Star Wars* or *Dances with Wolves*. However, when a lucrative deal does come up, it is usually kept inside. The small investor does not get offered a piece of *Star Wars*. The sweeter deals go into private placements which are easier to manage and which constitute the prime market for film financing.²⁴

B. Revenues

In general, domestic theatre revenues may account for as little as forty percent of total film revenues.²⁵ Thus, even if a film does not become a box office hit, the downside risk is somewhat reduced. The introduction of special incentives when some studios guarantee the return of the initial investment, or turn over their distribution fees if the partners are in danger of losing money, further reduces the risk of movie packages investment.²⁶

C. Risk Management

The absence of objective, reliable data on the past performance of motion picture production and development projects complicates the

23. Grove, *supra* note 1, at F-6.

24. David Alan Evans, *Reel Risk*, BARRONS, Jan. 9, 1984, at 56; *see also* Weber, *supra* note 4, at 69.

25. Film revenues are derived from the following sources:

1) Domestic Theatre receipts	40%
2) Video Cassette sales	5%
3) Pay Cable TV sales	15%
4) Foreign Theatre receipts	24%
5) Network TV	9%
6) Syndicated TV	5%
7) Ancillary	2%
TOTAL	100%

Interview with an independent producer, Los Angeles, spring 1986.

26. Grove, *supra* note 1, at F-6; *see also* Landro, *supra* note 3, at 15; Evans, *supra* note 24, at 56.

measurement of the risk/return trade-off of film projects. Additionally, film deals are non-homogeneous properties that embody a large non-systematic risk component. There is no guarantee that even a superstar's next film will be a money-making hit for its backers.

Successful investors are skilled at managing risk as well as managing money. Managing risk does not necessarily mean risk avoidance but rather the development of skills necessary to identify risk and cope with it. Three general techniques are available to manage business and financial risk: avoiding or eliminating risk, transferring or shifting risk, and reducing the remaining risk.²⁷ MPLP investors should determine whether the expected returns compensate for the risk involved; when restructuring cannot correct the problem, they should reject the investment.

The limited partnership structure transfers unlimited liability and the responsibility for cash calls to the general partner.²⁸ This shifts an external financial risk from the limited partners to the general partner. For a certain cost, static business risk can also be shifted. The vehicles for such a shift include insurance policies and completion bonds, which reduce the risk of cost overruns, and distribution contracts, which can be used as collateral for a production loan.

The remaining risk to the limited partners can be minimized as well. Negotiating better purchase terms which include lower equity investment exposure reduces business risk.²⁹ The right to audit, good accounting controls, and a reliable reporting system allow problems to be identified as they occur, and corrective action to be taken more quickly to reduce expenses.³⁰

Investment in a well-constructed MPLP package of several pictures can achieve a degree of risk reduction by diversifying the invested capital across a number of films.³¹ Risk is reduced by cross-collateralizing all of the films financed in the film portfolio. The risk reduction is not costless, but is achieved at the price of reduced return in the event of a mega-hit film.

Blind pools represent one attempt to diversify risk. In a blind pool, money is raised first and then the general partner selects the films to be financed or acquired.³² This arrangement is more desirable for the gen-

27. PYHRR & COOPER, *supra* note 9, at 331.

28. Weber, *supra* note 4, at 48; *see also* PHYRR & COOPER, *supra* note 9, at 330.

29. PYHRR & COOPER, *supra* note 9, at 331.

30. *Id.*

31. Weber, *supra* note 4, at 48.

32. *Id.* at 48-49.

eral partner but less so for the limited partners: it may give the general partner more leeway in cutting a deal, which benefits the general partner at the expense of the limited partners. Investment in a pre-selected film package lowers the risk borne by the limited partners by allowing them to evaluate the potential of a project.³³

Investment in film packages on a gross receipt basis is less risky than in projects which receive payments based on net receipts, all other things being equal. This is because investors receive a percentage of the gross and are almost always in some positive cash flow position.³⁴

A "less than purchase" participation in a film project is another way to reduce risk.³⁵ For example, providing the advertising funds on a film in exchange for a percentage of the return presents less of a risk to an investor. Usually, however, it is not a primary profit generator. For example, Angeles Cinema Investors paid \$6,300,000 of advertising costs on a package of films, including Academy Award winner *Chariots of Fire*, but earned only nine percent from the short-term deal.³⁶

In the absence of objective data, subjective judgment must be used to quantify the risk of investing in film projects. Estimates of the failure rate in the film business range from high to astronomical.³⁷ In 1981, approximately eighty percent of the films released in the United States lost money.³⁸ A vice president of a major California bank responsible for motion picture loans estimates that of any ten pictures, seven will lose money, two will break even, and one will make money.³⁹ Typically, a picture costing \$5,000,000 could generate the distribution of gross revenues presented in Table 1. Approximately seventy-five percent of gross revenues is earned in the first year; the percentages over the remaining six years are fifteen, five, two, one, one, and one.⁴⁰

33. *Id.* at 48.

34. *Id.* at 49, 69.

35. *Id.*

36. Weber, *supra* note 4, at 69.

37. *Id.*

38. *Id.* at 49.

39. See *supra* note 25.

40. *Id.*

TABLE 1: PROJECTED TOTAL GROSS REVENUE

Outcome	Probability	Total Projected Gross Revenue (Excluding Residual Value)
Good	.1	\$25,000,000
Normal	.2	\$15,000,000
Poor	.3	\$ 5,000,000

D. Marketability, Residual Investment Value and Government Regulation

Marketability risk, which refers to the potential decline in value when the asset is sold, is related to the breadth and depth of the market for that asset.⁴¹ As is the case for many other types of limited partnerships which invest in real estate, race horses, or gas and oil drilling, a liquidity risk exists. Once the investment is made, there is often no market for the units to be resold at any price.⁴²

An exceptional film may realize a quick residual value if the studio is anxious to buy back the partnership shares, often after the tax benefits have been passed through to the limited partners.⁴³ However, the price which the studio must pay to buy back the film becomes an issue. At present, there is no commonly accepted valuation method which can be used to establish the residual value of the film project at the start. This article suggests that the film's residual value can be calculated. The assumption is that the film will earn constant revenues after a certain number of years, usually seven, which can be capitalized as a perpetuity.⁴⁴

This assumption is not unreasonable, given the demand for software in the video industry. The recent purchase of MCA Universal Studios by Japanese hardware manufacturer Matsushita, owner of Panasonic, Quasar, and Technics, has been seen by many as a way for Matsushita to ensure an immensely valuable supply of video software.⁴⁵ Movies, records, and films in studio archives, all can be played on Matsushita equipment.

41. WESTON & COPELAND, *supra* note 8, at 300.

42. Weber, *supra* note 4, at 70.

43. This has encouraged critics to comment that profitable film investment projects sold to the general public are merely interest-free loans to the studios. See Grove, *supra* note 1; see also *supra* notes 3, 4, 24.

44. See *supra* note 25.

45. Janice Castro, *Let Us Entertain You*, TIME, Dec. 10, 1990, at 48.

In an attempt to protect investors from adverse economic consequences, the SEC, as well as the various state securities commissions, have established approved income and net worth levels at which a particular offering might represent a suitable risk for prospective investors.⁴⁶ The approved income and net worth levels must be specified by the project sponsors in the offering prospectus.

For example, the Delphi I project (1982), which raised \$60,000,000 in units of \$5,000, required that investors have a net worth, excluding home, furnishings and automobiles, of \$150,000 and some income taxable at the federal level at the fifty percent rate.⁴⁷ Angeles Cinema Investors raised \$10,800,000 through an issue in which units were sold at \$1,000 each with a minimum purchase of three units.⁴⁸ In most states, participation was permitted if the prospective investor could prove a net worth of \$30,000 and an annual gross income of \$30,000.⁴⁹

IV. CRITICAL DATA AND MODEL

A. Critical Data

A number of important factors must be evaluated in considering a project's potential. The track record of the people involved is perhaps the most important variable in assessing the economic viability of a film project. The director is especially important because he or she is basically responsible for bringing the project in on budget and on time.⁵⁰

Another factor crucial to the success of the project is the nature of the production itself.⁵¹ Initially, the MPLP's were confined to movies that would appeal to the general entertainment market and that could be easily edited for network television. More recently, the rapid growth of the video cassette and cable markets for adult viewers has encouraged the formation of MPLP's for the production of X-rated sex films.

The primary source of information for the prospective investor is a prospectus.⁵² In addition to fulfilling the requirements specified by the state and federal regulating authorities, the prospectus should also con-

46. In California, investor suitability is determined by examining the individual application for syndication. An attempt is made to determine how risky the prospective investment is, as well as to assess other risk factors, such as financing, rights of limited partners, conflict of interest in terms of the upfront compensation to the syndication sponsor, and creative talent. See Weber, *supra* note 4, at 69-70.

47. Weber, *supra* note 4, at 48, 69.

48. *Id.* at 47-48.

49. *Id.* at 69.

50. Grove, *supra* note 1, at F-3.

51. *Id.*; see also Weber, *supra* note 4, at 48.

52. Appendix, Figure 1.

tain an estimated production schedule,⁵³ an estimated production budget,⁵⁴ and a pro forma income statement.⁵⁵

Contracts with the main talent are extremely important in developing the pro forma income statement because they specify how profits are defined.⁵⁶ For example, the Delphi I partnership owned forty percent of the film *Tootsie*, starring Dustin Hoffman. Although the film earned approximately \$173,000,000 in the first year of release, the partnership received only \$27,700,000.⁵⁷ Contracts with Hoffman, director Sydney Pollack and the producer specified a priority claim in the distribution of profits of thirty percent of gross revenues. An additional seventeen and one-half percent, or \$30,300,000, was paid to Columbia in distribution fees. Another twelve and one-half percent of gross, or \$21,600,000, was distributed as residual payments to other actors. The partnership received forty percent of the remaining \$69,200,000, or \$27,700,000.⁵⁸

Another essential component in evaluating a film's potential success is the quality of the screenplay.⁵⁹ Many movies are financed six to twelve months before filming, and often some eighteen months before the film is released. Appraising the market potential of a film before it is produced or released is extremely speculative even for professionals. The market is driven by popular taste and fads. It may move away from the product during the production period. Often an informed, honest appraisal of the value of a film at the time of purchase may substantially over- or underestimate the income eventually derived from the film.

Other significant factors in assessing the viability of a film project are the purchase of a completion bond, terms of a distribution contract, and the right to audit. Although a completion bond is not always required, it provides a guarantee which reduces the risk of cost overruns.⁶⁰ The film distribution contract can be used as collateral for a production loan.⁶¹ The right to audit is an important component of a syndication agreement because it specifies the conditions under which investors can examine the books of the project.⁶²

The tax aspects of many film deals can be very complicated and

53. *Id.* at Figure 2.

54. *Id.* at Figure 3.

55. *Id.* at Figure 4.

56. Evans, *supra* note 24, at 56.

57. *Id.* at 56.

58. *Id.* at 56-57.

59. *Id.* at 56.

60. Grove, *supra* note 1, at F-3.

61. *Id.*; see also *supra* notes 3, 24.

62. See PYHRR & COOPER, *supra* note 9.

require professional advice. Two comments are made in passing. Under pre-revision tax law, investors in film projects who wished to claim tax deductions had to be "at risk" financially in order to qualify.⁶³ Investors interested in the investment tax credit usually requested a SEC ruling or opinion of counsel to ensure conformity with the rigorous standards required. An investment tax credit of up to ten percent of qualified production costs was available to taxpayers who had an ownership interest in the film at the time the film was first placed in service.⁶⁴ However, once exhibited before an audience for which it was created, the film was considered "used," and no tax credit was available to the subsequent buyers. This often benefited the film distributor, rather than the independent producer or investor. Prospective investors should satisfy themselves that all tax benefits (but not liabilities), flow through the partnership to the individual partners.

Depreciation is another important factor to consider. The income-forecast method is commonly used to calculate depreciation in film investment projects.⁶⁵ This method of depreciation distributes the purchase price across the economic life of the film on the basis of the percentage of total revenue received in a given year. The depreciation in any year, t , can be calculated:

$$\text{Depreciation in Year } t = \text{Purchase Price of Film} \times \frac{\text{Total Receipt for Taxable Year } t}{\text{Total Net Receipt Estimated to Be Earned During Useful Film Life.}}$$

Although the residual value of a project has some significance, most film investors do not take the residual or windup value of the project into consideration when they buy into a deal. The residual value of a film can be estimated, based on the assumption that after a certain number of years the film will earn a constant revenue which can be capitalized as a perpetuity.⁶⁶ In recent years, with the rise in the demand for video software, the residual value has tended to increase. The residual value can be calculated:

$$\text{Residual Value} = \frac{\text{Constant Remaining Perpetuity Cash Flow}}{\text{Discount Rate}}$$

where the discount rate is the rate of return earned on investments of comparable risk.

Other information included in the offering prospectus should in-

63. 26 U.S.C. § 101 *et seq.*

64. Grove, *supra* note 1, at F-4.

65. *Id.*

66. WESTON & COPELAND, *supra* note 8, at 691.

clude liquidity data, such as the conditions under which funds can be borrowed to cover production costs and management fees, as well as the interest rate to be paid on such debt; minimum cash balances necessary to maintain the operation of the project; and provisions regarding the distribution of profits.⁶⁷ In some cases, cash distributions begin after the film has been released. All available cash is distributed on a monthly or quarterly basis.

A potential investor is well advised to consider the possibilities for resale of participation units. The recent establishment of the National Partnership Exchange (NAPEX) in St. Petersburg, Florida, is one attempt to provide a secondary market for the trading of publicly regulated limited partnership units.⁶⁸ Buyers and sellers are matched on behalf of stock brokerage firms through the competitive auction market. Only units of public syndicates regulated by the SEC are traded because they are easier to analyze and are considered less risky than private offerings.

Since start-up fees for new syndications can amount to as much as twenty-five percent of the initial unit purchase price, secondary market purchasers are interested in "seasoned" or "used" public syndication units with positive cash flows.⁶⁹ Such "seasoned" units may sell at as much as a fifty percent discount, reflecting not only start-up fees, but to some extent the risk premiums required by secondary market purchasers.⁷⁰ Exceptional syndications which are doing well may sell at a premium. Units purchased on the secondary market from investors who want to cash out are often repackaged in private limited partnerships and resold to high-end investors.

B. *The Model*

In general, investors are interested in the after-tax return on investment, rather than the before-tax rate of return. The Net Present Value (NPV) model is often used to evaluate and rank prospective investment projects on a before- or after-tax basis.⁷¹ The general NPV model can be written:⁷²

67. Weber, *supra* note 4, at 70.

68. Ruth Ryon, *Used Syndicate Shares Find Market*, L.A. TIMES, June 22, 1986, at VIII, at 1.

69. *Id.* at 10.

70. *Id.*

71. WESTON & COPELAND, *supra* note 8, at 110.

72. LUSZTIG ET AL., *supra* note 7, at 180-81.

$$\widetilde{NPV} = \sum_{t=1}^n \frac{\widetilde{NCF}_t}{(1 + R_f)^t} + \frac{\widetilde{\text{Residual Value}}}{(1 + R_f)^n} - \tilde{I}$$

where:

- 1) \tilde{I} is the uncertain initial investment
- 2) \widetilde{NCF}_t is the uncertain net cash flow in period t
- 3) Residual Value is the uncertain selling price of the asset at the end of the holding period minus taxes due and unpaid debt
- 4) R_f is the expected risk-free rate for the investment period.

The uncertain net cash flow in period t , \widetilde{NCF}_t , is the difference between the annual cash net income plus non-cash expenses, less non-cash income. This may result in negative tax liabilities, which may, in some circumstances, be used to shelter other income, so that negative cash flow before tax may provide positive cash flow for the investor on an after-tax basis.

The probability that the \widetilde{NPV} of an investment is positive can be derived from:⁷³

$$P(\widetilde{NPV} > 0) = 1 - \int_{-\infty}^Z f(x) dx \text{ where}$$

- 1) $f(x)$ is the normal distribution function

$$2) Z = \frac{0 - E(\widetilde{NPV})}{\sigma(\widetilde{NPV})}$$

$$3) E(\widetilde{NPV}) = \sum_{t=1}^n \frac{E(\widetilde{NCF}_t)}{(1 + R_f)^t} - E(\tilde{I})$$

$$4) \sigma(\widetilde{NPV}) = \left[\sum_{i=1}^n \sum_{j=1}^n b_i b_j \text{cov}(\widetilde{NCF}_i, \widetilde{NCF}_j) \right]^{1/2}$$

$$= \left[\sum_{i=1}^n b_i^2 \sigma^2(\widetilde{NCF}_i) + 2 \sum_{i < j} b_i b_j \text{cov}(\widetilde{NCF}_i, \widetilde{NCF}_j) \right]^{1/2}$$

$$5) b_i = \frac{1}{(1 + R_f)^i}; i=1,2,\dots,n$$

$$6) b_j = \frac{1}{(1 + R_f)^j}; j=1,2,\dots,n$$

73. *Id.*

By way of exemplary application, assume a limited partnership formed before, during or after the production of the film, which enters into an agreement with an independent producer to purchase worldwide or territorial rights to a film for \$5,000,000. The general partner puts up ten percent and a thousand units are sold at \$4,500 each. Three possible revenue performance scenarios—good, normal and poor—are assumed. The corresponding probabilities and total anticipated gross revenues for each possible outcome are presented in Table 1.⁷⁴ Revenue projections over the seven-year economic life of the corresponding residual values, the expected values $E(\widetilde{NCF}_t)$ ⁷⁵ and standard deviations $\sigma(\widetilde{NCF}_t)$ ⁷⁶ for each possible outcome are presented in Table 2. The residual value is estimated using a risk-free rate of ten percent.⁷⁷

74. See *supra* note 40 and accompanying text.

75. LUSZTIG ET AL., *supra* note 7, at 181.

76. *Id.*

77. Assumed interest rate on seven-year riskless bonds.

TABLE 2: PROJECTED ANNUAL GROSS REVENUES

YEAR	1	2	3	4	5	6	7	8	9	10
Percentage of Total Revenue	Probability	76	15	6	2	1	1	Forecast Revenue Year 8	Residual Value at 10 per cent	Total Revenue Year 7 Including Residual Value
Good	0.1	18,750,000	3,750,000	1,250,000	500,000	250,000	250,000	125,000	1,250,000	1,500,000
Normal	0.2	11,250,000	2,250,000	750,000	300,000	150,000	150,000	75,000	750,000	900,000
Poor	0.7	3,750,000	750,000	250,000	100,000	50,000	50,000	25,000	250,000	300,000
Expected Value $E(NCF_t)$		6,750,000	1,350,000	450,000	180,000	90,000	90,000			640,000
Standard Deviation $\sigma(NCF_t)$		4,974,937	994,987	331,662	132,665	66,332	66,332			397,995
Depreciation Taxable Income		3,750,000	750,000	250,000	100,000	50,000	50,000			-400,000
Tax $(T = 15\%)$		3,000,000	600,000	200,000	80,000	40,000	40,000			940,000
Expected Revenue after Tax		450,000	90,000	30,000	12,000	6,000	6,000			141,000
Tax $(T = 28\%)$		6,300,000	1,260,000	420,000	168,000	84,000	84,000			799,000
Expected Revenue after Tax		840,000	168,000	56,000	22,400	11,200	11,200			263,200
		5,910,000	1,182,000	394,000	157,600	78,800	78,800			676,800

The expected Net Present Value, $E(\widetilde{NPV})$, is \$3,096,891.⁷⁸ The successive net cash flows are perfectly correlated and $\sigma(\widetilde{NPV})$ is given by

$$\sigma(\widetilde{NPV}) = \sum_{t=1}^n \frac{\sigma(\widetilde{NCF}_t)^{79}}{(1 + R_f)^t}$$

The probability⁸⁰ of realizing a positive Net Present Value is approximately 0.70.

The Internal Rate of Return (IRR)⁸¹ after tax plus the effective tax rates excluding and including the residual value are presented in Table 3. The residual value is treated as recovered depreciation, which is essentially equivalent to an interest-free loan, and the tax liability is calculated at the respective tax rates. The IRR before tax, with and without the residual value, is 57.8⁸² and 57.3⁸³ percent respectively, supporting the observation that the present value of the residual is not a significant factor in the investment decision process. Effective tax rates do not appear to decline when the nominal tax rate increases, as would be expected. This suggests that the depreciation allowance when the probability of success is low may not be worth much to taxpayers in higher tax brackets.⁸⁴

78. $E(\widetilde{NPV}) = 6,750,000/(1.10) + 1,350,000/(1.10)^2 + 450,000/(1.10)^3 + 180,000/(1.10)^4$.

79. $\sigma(\widetilde{NPV}) = 4,974,937/(1.10) + 994,987/(1.10)^2 + 331,665/(1.10)^3 + 132,665/(1.10)^4 + 66,332/(1.10)^5 + 66,332/(1.10)^6 + 397,995/(1.10)^7 = \$5,967,087$.

80. $Z = (0 - 3,096,891)/5,967,634 = -0.52$. Probability ($\widetilde{NPV} > 0$) = $1 - 0.30 = 0.70$. See LUSZTIG ET AL., *supra* note 7, at 182.

81. See WESTON & COPELAND, *supra* note 8, at 111.

82. $6,750,000/(1 + i) + 1,350,000/(1 + i)^2 + 450,000/(1 + i)^3 + 180,000/(1 + i)^4 + 90,000/(1 + i)^5 + 90,000/(1 + i)^6 + 540,000/(1 + i)^7 - 5,000,000 = 0$; i , the Internal Rate of Return (IRR), = 57.8%.

83. $6,750,000/(1 + i) + 1,350,000/(1 + i)^2 + 450,000/(1 + i)^3 + 180,000/(1 + i)^4 + 90,000/(1 + i)^5 + 90,000/(1 + i)^6 + 90,000/(1 + i)^7 - 5,000,000 = 0$; i , the Internal Rate of Return (IRR), = 57.3%.

84. See Grove, *supra* note 1; see also *supra* notes 4, 24.

TABLE 3: INTERNAL RATE OF RETURN

	Excluding Residual Value	Including Residual Value
<i>Before tax</i>	57.3% ⁸⁵	57.8% ⁸⁶
<i>After tax</i>		
T = 15%	48.5% ⁸⁷	49.6% ⁸⁸
Effective Tax Rate ⁸⁹	15.4% ⁹⁰	14.2% ⁹¹
T = 28%	40.9% ⁹²	42.1% ⁹³
Effective Tax Rate ⁹⁴	28.6% ⁹⁵	27.2% ⁹⁶

If the limited partners receive fifty percent⁹⁷ of gross receipts plus one hundred percent⁹⁸ of the residual gross receipts value at the end of the holding period, expected revenues for each possible outcome can be calculated on a before- and after-tax basis, as presented in Table 4.⁹⁹ After-tax calculations are made including and excluding depreciation, assuming tax rates of fifteen¹⁰⁰ and twenty-eight¹⁰¹ percent.

85. See *supra* note 83.

86. See *supra* note 82.

87. See *supra* notes 82 and 83 for examples of IRR calculations.

88. *Id.*

89. Effective tax rate = (IRR before tax - IRR after tax)/(IRR before tax) × 100%.

90. $(57.3 - 48.5)/(57.3) \times 100\% = 15.4\%$.

91. $(57.8 - 49.6)/(57.8) \times 100\% = 14.2\%$.

92. See *supra* notes 82 and 83 for examples of IRR calculations.

93. *Id.*

94. See *supra* note 89.

95. $(57.3 - 40.9)/(57.3) \times 100\% = 28.6\%$.

96. $(57.8 - 42.1)/(57.8) \times 100\% = 27.2\%$.

97. Assumed participation rate.

98. *Id.*

99. Assumed tax rate.

100. *Id.*

101. *Id.*

TABLE 4: ANNUAL CASH FLOWS¹ TO LIMITED PARTNERS BEFORE AND AFTER TAX FOR POSSIBLE OUTCOMES

Possible Outcome	Probability	0	1	2	3	4	5	6	7	Residual Value
Good	.1	\$-4,500,000	9,375,000	1,875,000	675,000	250,000	125,000	125,000	125,000	1,250,000
Normal	.2	-4,500,000	5,625,000	1,125,000	375,000	150,000	75,000	75,000	75,000	750,000
Poor	.7	-4,500,000	1,875,000	375,000	125,000	50,000	25,000	25,000	25,000	250,000
Depreciation	0		3,750,000	750,000	250,000	100,000	50,000	50,000	50,000	
Expected Cash Flows										
Before Tax		-4,500,000	3,375,000	675,000	230,000	90,000	45,000	45,000	45,000	450,000
After Tax With Depreciation ²										
T=15%		-4,500,000	3,431,250	636,250	233,011	91,500	45,750	45,750	45,750	382,500
T=28%		-4,500,000	3,480,000	696,000	235,600	92,800	46,400	46,400	46,400	324,000
After Tax Excluding Depreciation										
T=15%		-4,500,000	2,868,750	573,750	195,500	76,500	38,250	38,250	38,250	450,000
T=28%		-4,500,000	2,430,000	486,000	165,600	46,800	32,400	32,400	32,400	450,000

¹Assuming no investment tax credit.²Recovered depreciation is taxed at the marginal rate.

The IRR based on fifty percent¹⁰² of the Expected Value of Gross Receipts realized by the limited partners before tax is 5.3 percent.¹⁰³ The general partner realizes approximately 59.5 percent¹⁰⁴ before expenses. The after-tax IRR realized by the limited partners increases from 5.6 percent,¹⁰⁵ when the tax rate is fifteen percent,¹⁰⁶ to 6.3 percent¹⁰⁷ when the tax rate is fifty percent.¹⁰⁸ When the depreciation deduction is excluded, the IRR is negative, suggesting that the project is not economically viable without the tax shelter component.

V. CONCLUSION AND SUGGESTIONS FOR FUTURE RESEARCH

A major objective of the Tax Reform Act of 1986¹⁰⁹ was to shift the emphasis in financial feasibility analysis away from the tax subsidy aspect to considerations of economic productivity and viability. The future of public film project offerings will depend on how well Wall Street, the industry and the SEC can develop film projects at low front- and back-end costs to make them attractive to prospective investors.

This article's practical guidelines, based on the techniques of capital budgeting, can be used by individual investors to evaluate the financial feasibility of MPLP's. Hopefully, it will prove useful to prospective investors, as well as film syndicators, managers and marketers, because it provides a way of separating out the relative contribution of product productivity, tax shelter and residual value to the return produced by a MPLP. Revenue received in the early years is a major determinant of return for all investors, whereas tax shelter is a less important consideration for lower bracket investors. The residual value is not a significant component of the rate of return in the present analysis. However, this could change if the demand for "seasoned" films increases in the future.

The framework presented in this article could be extended to derive a set of general mathematical relationships which could illuminate the financing and/or participation relationship between the general partner and the limited partners, in a context of various tax rates, depreciation method schedules, revenues and debt financing. This framework could form a basis for a new NPV-IRR Investment Section for inclusion in SEC Registrations and Evaluations of Limited Partnership Prospectuses.

102. Assumed participation rate.

103. See *supra* notes 82 and 83 for sample calculations.

104. *Id.*

105. *Id.*

106. Assumed tax rate.

107. See *supra* notes 82 and 83 for sample calculations.

108. Assumed tax rate.

109. EVERETT T. ALLEN, JR. ET AL., PENSION PLANNING 340 (6th ed. 1988).

A further application would examine the elasticity of the general-limited partner substitution relationship, whereby the general partner's pre-tax IRRs subsidize the limited partner's pre-tax IRRs. This substitution would help to float pre-priced limited partnerships in the current period of reduced IRS subsidization.

APPENDIX: CRITICAL DATA

FIGURE 1: PROSPECTUS (MAIN COMPONENTS)

1. The Film Project
 - a) Subject of the Film
 - b) Film Producer - Track Record
 - c) Film Distribution
 - d) Film Synopsis
2. Film Production
 - a) The Production Schedule (FIGURE 2)
 - b) The Production Budget (FIGURE 3)
3. Film Marketing
4. Financial Analysis
 - a) Structure - Limited Partnership
 - b) Pro Forma Income Statement (FIGURE 4)
 - c) Residual Value Analysis
 - d) Tax Considerations
 - e) Other Considerations
 - (1) Right to Audit
 - (2) Liquidity
 - (a) Primary Market
 - (b) Secondary Market

FIGURE 2: PRODUCTION SCHEDULE COMPONENTS

1. Research
2. Screen Writing
3. Final Pre-production
4. Shooting the Footage
5. Editing the Footage
6. Assembling the Composite Sound Track
 - a) Voice
 - b) Music
 - c) Sound Effects
7. Sound Mix
8. Negative Cutting
9. Answer Print
10. Print Publication

FIGURE 3: PRODUCTION BUDGET COMPONENTS

1.	Personnel	
a.	Research and Screen Writing	
b.	Director	
c.	Editors	
d.	Line Producer	
e.	Film Crew	
f.	Other	
2.	Camera Package	
3.	Lighting	
4.	Sets (Rental and Construction)	
5.	Studio Space (including Technicians)	
6.	Insurance Package	
7.	Legal Services	
8.	Editing Equipment	
9.	Music (All Costs of Final Tape)	
10.	Titles and Opticals	
11.	Film Stock and Sound Stock	
12.	Laboratory Work	
13.	Talent	
<hr/>		
14.	Subtotal	
15.	Administrative Overhead	(5% of Subtotal)
16.	Contingency	(8% of Subtotal)
17.	Executive Producer	(6-1/4% of Subtotal)
<hr/>		
18.	Total	
19.	Financing Fee	(7.2% of Total in Line 18)
<hr/>		
20.	Total Budget	
<hr/>		

FIGURE 4: PRO FORMA INCOME STATEMENT COMPONENTS

Revenue Breakout in Percentage

1. Domestic Film Rentals	(40.3%)
2. Foreign Film Rentals	(24.2%)
3. Network Television	(8.4%)
4. Television Syndication	(5.2%)
5. Pay/Cable Television	(14.6%)
6. Video Cassette	(5.2%)
7. Ancillary	(2.1%)

Total Gross Revenues

- Distribution Fees

Gross Film Rentals

- Distribution Costs

Total Net Revenues

- Net Income to Partnership Before Tax

- Tax Liability

Cash Flow to Partnership After Tax

